



**RECRA
ENVIRONMENTAL
INC.**

H0499-1MA/KC/RKX
Chemical and Environmental Measurement Information

0052425

**Recra LabNet Philadelphia
Analytical Report**

**Client : TNU-HANFORD B99-078
RFW# : 9908L850
SDG/SAF# : B99-078/H0499**

**W.O.# : 10985-001-001-9999-00
Date Received: 08-24-99**

REVISION

METALS CASE NARRATIVE

**RECEIVED
JAN 18 2000
EDMC**

This package has been revised to include the addition of Antimony and Thallium.

1. This narrative covers the analyses of 7 soil samples.
2. Samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. All cooler temperatures have been recorded on the Chain of Custody.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL) or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the laboratory control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. The matrix spike (MS) recovery for 1 analyte was outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of **024** pages.

11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at the following concentration:

<u>Sample ID</u>	<u>Element</u>	<u>PDS Concentration (ppb)</u>	<u>PDS % Recovery</u>
B0W5P4	Antimony	100	104.2

12. The duplicate analyses for 2 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.

J. Michael Taylor
J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

mld/m08-850r

11-11-99
Date

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METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this
 Recra Lot#: 9908L850

Leaching Procedure: 1310 1311 1312 Other: _____

CLP Metals Digestion and Analysis Methods: ILM03.0 ILM04.0

Metals Digestion Methods: 3005A 3010A 3015 3020A 3050A 3051 200.7 SS17
Other: _____

Metals Analysis Methods

	SW846	EPA	STD MTD	EPA OSWR	USATHAMA
Aluminum	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Antimony	<u>✓6010B</u> <u>7041⁵</u>	<u>200.7</u>	<u>204.2</u>		<u>99</u>
Arsenic	<u>✓6010B</u> <u>7060A⁵</u>	<u>200.7</u>	<u>206.2</u>	<u>3113B</u>	<u>99</u>
Barium	<u>✓6010B</u>	<u>200.7</u>			<u>99</u>
Beryllium	<u>✓6010B</u>	<u>200.7</u>			<u>99</u>
Bismuth	<u>6010B¹</u>	<u>200.7¹</u>		<u>1620</u>	<u>99</u>
Boron	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Cadmium	<u>✓6010B</u> <u>7131A⁵</u>	<u>200.7</u>	<u>213.2</u>		<u>99</u>
Calcium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Chromium	<u>✓6010B</u> <u>7191⁵</u>	<u>200.7</u>	<u>218.2</u>		<u>SS17</u>
Cobalt	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Copper	<u>✓6010B</u> <u>7211⁵</u>	<u>200.7</u>	<u>220.2</u>		<u>99</u>
Iron	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Lead	<u>✓6010B</u> <u>7421⁵</u>	<u>200.7</u>	<u>239.2</u>	<u>3113B</u>	<u>99</u>
Lithium	<u>6010B</u> <u>7430⁴</u>	<u>200.7</u>		<u>1620</u>	<u>99</u>
Magnesium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Manganese	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Mercury	<u>7470A³</u> <u>✓7471A³</u>	<u>245.1²</u>	<u>245.5²</u>		<u>99</u>
Molybdenum	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Nickel	<u>✓6010B</u>	<u>200.7</u>			<u>99</u>
Potassium	<u>6010B</u> <u>7610⁴</u>	<u>200.7</u>	<u>258.1⁴</u>		<u>99</u>
Rare Earths	<u>6010B¹</u>	<u>200.7¹</u>		<u>1620</u>	<u>99</u>
Selenium	<u>✓6010B</u> <u>7740⁵</u>	<u>200.7</u>	<u>270.2</u>	<u>3113B</u>	<u>99</u>
Silicon	<u>6010B¹</u>	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silica	<u>6010B</u>	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silver	<u>✓6010B</u> <u>7761⁵</u>	<u>200.7</u>	<u>272.2</u>		<u>99</u>
Sodium	<u>6010B</u> <u>7770⁴</u>	<u>200.7</u>	<u>273.1⁴</u>		<u>99</u>
Strontium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Thallium	<u>✓6010B</u> <u>7841⁵</u>	<u>200.7</u>	<u>279.2</u> <u>200.9</u>		<u>99</u>
Tin	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Titanium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Uranium	<u>6010B¹</u>	<u>200.7¹</u>		<u>1620</u>	<u>99</u>
Vanadium	<u>✓6010B</u>	<u>200.7</u>			<u>99</u>
Zinc	<u>✓6010B</u>	<u>200.7</u>			<u>99</u>
Zirconium	<u>6010B¹</u>	<u>200.7¹</u>		<u>1620</u>	<u>99</u>

Other: _____

Method: _____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LCS = Laboratory Control Sample.
NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).
4. Flame AA.
5. Graphite Furnace AA.

INORGANICS DATA SUMMARY REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

WORK ORDER: 10985-001-001-9999-00

RCRA LOT #: 9908L850

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR	
-001	BOW5P4	Silver, Total	0.09	u	MG/KG	0.09	1.0
		Arsenic, Total	2.2		MG/KG	0.28	1.0
		Barium, Total	60.3		MG/KG	0.03	1.0
		Beryllium, Total	0.59		MG/KG	0.009	1.0
		Cadmium, Total	0.22		MG/KG	0.03	1.0
		Chromium, Total	6.0		MG/KG	0.07	1.0
		Copper, Total	16.4		MG/KG	0.10	1.0
		Mercury, Total	0.01	u	MG/KG	0.01	1.0
		Nickel, Total	9.3		MG/KG	0.10	1.0
		Lead, Total	3.4		MG/KG	0.18	1.0
		Antimony, Total	0.22	u	MG/KG	0.22	1.0
		Selenium, Total	0.32	u	MG/KG	0.32	1.0
		Thallium, Total	0.46	u	MG/KG	0.46	1.0
		Vanadium, Total	63.9		MG/KG	0.05	1.0
		Zinc, Total	48.1		MG/KG	0.07	1.0
-002	BOW5P2	Silver, Total	0.09	u	MG/KG	0.09	1.0
		Arsenic, Total	2.3		MG/KG	0.29	1.0
		Barium, Total	92.6		MG/KG	0.03	1.0
		Beryllium, Total	0.79		MG/KG	0.009	1.0
		Cadmium, Total	0.15		MG/KG	0.03	1.0
		Chromium, Total	7.8		MG/KG	0.07	1.0
		Copper, Total	16.6		MG/KG	0.10	1.0
		Mercury, Total	0.01	u	MG/KG	0.01	1.0
		Nickel, Total	11.9		MG/KG	0.10	1.0
		Lead, Total	3.6		MG/KG	0.18	1.0
		Antimony, Total	0.22	u	MG/KG	0.22	1.0
		Selenium, Total	0.40		MG/KG	0.32	1.0
		Thallium, Total	0.46	u	MG/KG	0.46	1.0
		Vanadium, Total	77.7		MG/KG	0.05	1.0
		Zinc, Total	54.2		MG/KG	0.07	1.0

INORGANICS DATA SUMMARY REPORT 11/11/99

CLIENT: TNU-HANFORD B99-076

WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 9908L850

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	BOW5M4	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	2.4	MG/KG	0.28	1.0
		Barium, Total	104	MG/KG	0.03	1.0
		Beryllium, Total	0.72	MG/KG	0.008	1.0
		Cadmium, Total	0.23	MG/KG	0.03	1.0
		Chromium, Total	9.5	MG/KG	0.07	1.0
		Copper, Total	14.1	MG/KG	0.10	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Nickel, Total	11.4	MG/KG	0.10	1.0
		Lead, Total	4.8	MG/KG	0.18	1.0
		Antimony, Total	0.21 u	MG/KG	0.21	1.0
		Selenium, Total	0.45	MG/KG	0.31	1.0
		Thallium, Total	0.44 u	MG/KG	0.44	1.0
		Vanadium, Total	63.3	MG/KG	0.05	1.0
		Zinc, Total	62.1	MG/KG	0.07	1.0
-004	BOW5P3	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	2.3	MG/KG	0.26	1.0
		Barium, Total	81.2	MG/KG	0.02	1.0
		Beryllium, Total	0.69	MG/KG	0.008	1.0
		Cadmium, Total	0.09	MG/KG	0.02	1.0
		Chromium, Total	6.2	MG/KG	0.06	1.0
		Copper, Total	13.9	MG/KG	0.1	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	8.7	MG/KG	0.1	1.0
		Lead, Total	3.4	MG/KG	0.17	1.0
		Antimony, Total	0.20 u	MG/KG	0.20	1.0
		Selenium, Total	0.57	MG/KG	0.29	1.0
		Thallium, Total	0.42 u	MG/KG	0.42	1.0
		Vanadium, Total	70.3	MG/KG	0.05	1.0
		Zinc, Total	49.9	MG/KG	0.06	1.0

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INORGANICS DATA SUMMARY REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

WORK ORDER: 10985-001-001-9999-00

RCRA LOT #: 9908L850

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	B0W5M5	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	2.0	MG/KG	0.28	1.0
		Barium, Total	76.3	MG/KG	0.03	1.0
		Beryllium, Total	0.98	MG/KG	0.008	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	6.4	MG/KG	0.07	1.0
		Copper, Total	13.6	MG/KG	0.10	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Nickel, Total	9.7	MG/KG	0.10	1.0
		Lead, Total	3.4	MG/KG	0.18	1.0
		Antimony, Total	0.21 u	MG/KG	0.21	1.0
		Selenium, Total	0.31 u	MG/KG	0.31	1.0
		Thallium, Total	0.63	MG/KG	0.45	1.0
		Vanadium, Total	70.2	MG/KG	0.05	1.0
		Zinc, Total	47.2	MG/KG	0.07	1.0
-006	B0W5P7	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	2.8	MG/KG	0.29	1.0
		Barium, Total	64.4	MG/KG	0.03	1.0
		Beryllium, Total	0.67	MG/KG	0.009	1.0
		Cadmium, Total	1.1	MG/KG	0.03	1.0
		Chromium, Total	10.0	MG/KG	0.07	1.0
		Copper, Total	34.2	MG/KG	0.10	1.0
		Mercury, Total	0.05	MG/KG	0.01	1.0
		Nickel, Total	7.8	MG/KG	0.10	1.0
		Lead, Total	11.8	MG/KG	0.18	1.0
		Antimony, Total	0.22 u	MG/KG	0.22	1.0
		Selenium, Total	0.32 u	MG/KG	0.32	1.0
		Thallium, Total	0.57	MG/KG	0.46	1.0
		Vanadium, Total	45.5	MG/KG	0.05	1.0
		Zinc, Total	118	MG/KG	0.07	1.0

INORGANICS DATA SUMMARY REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 9908L850

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR	
-007	B0W681	Silver, Total	0.09	u	MG/KG	0.09	1.0
		Arsenic, Total	2.5		MG/KG	0.29	1.0
		Barium, Total	78.9		MG/KG	0.03	1.0
		Beryllium, Total	1.0		MG/KG	0.009	1.0
		Cadmium, Total	0.80		MG/KG	0.03	1.0
		Chromium, Total	8.8		MG/KG	0.07	1.0
		Copper, Total	25.8		MG/KG	0.11	1.0
		Mercury, Total	0.02	u	MG/KG	0.02	1.0
		Nickel, Total	9.6		MG/KG	0.11	1.0
		Lead, Total	7.5		MG/KG	0.19	1.0
		Antimony, Total	0.22	u	MG/KG	0.22	1.0
		Selenium, Total	0.33	u	MG/KG	0.33	1.0
		Thallium, Total	0.50		MG/KG	0.47	1.0
		Vanadium, Total	73.0		MG/KG	0.05	1.0
		Zinc, Total	114		MG/KG	0.07	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/11/99

CLIENT: TNU-HANFORD B99-078

RECRA LOT #: 9908L850

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	REPORTING			DILUTION FACTOR
			RESULT	UNITS	LIMIT	
BLANK1	99L0601-MB1	Silver, Total	0.10	u MG/KG	0.10	1.0
		Arsenic, Total	0.33	u MG/KG	0.33	1.0
		Barium, Total	0.19	MG/KG	0.03	1.0
		Beryllium, Total	0.01	u MG/KG	0.01	1.0
		Cadmium, Total	0.03	u MG/KG	0.03	1.0
		Chromium, Total	0.08	u MG/KG	0.08	1.0
		Copper, Total	0.12	u MG/KG	0.12	1.0
		Nickel, Total	0.12	u MG/KG	0.12	1.0
		Lead, Total	0.21	u MG/KG	0.21	1.0
		Antimony, Total	0.25	u MG/KG	0.25	1.0
		Selenium, Total	0.37	u MG/KG	0.37	1.0
		Thallium, Total	0.53	u MG/KG	0.53	1.0
		Vanadium, Total	0.06	u MG/KG	0.06	1.0
		Zinc, Total	0.23	MG/KG	0.08	1.0
BLANK1	99C0254-MB1	Mercury, Total	0.02	u MG/KG	0.02	1.0

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INORGANICS ACCURACY REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 9908L850

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B0W5P4	Silver, Total	3.9	0.09u	4.4	88.6	1.0
		Arsenic, Total	165	2.2	178	91.6	1.0
		Barium, Total	215	60.3	178	86.9	1.0
		Beryllium, Total	4.7	0.59	4.4	93.4	1.0
		Cadmium, Total	4.2	0.22	4.4	90.5	1.0
		Chromium, Total	20.5	6.0	17.8	81.5	1.0
		Copper, Total	33.6	16.4	22.2	77.5	1.0
		Mercury, Total	0.12	0.01u	0.13	96.9	1.0
		Nickel, Total	46.8	9.3	44.5	84.3	1.0
		Lead, Total	43.1	3.4	44.5	89.2	1.0
		Antimony, Total	17.0	0.22u	44.5	38.2	1.0
		Selenium, Total	158	0.32u	178	89.1	1.0
		Thallium, Total	159	0.46u	178	89.7	1.0
		Vanadium, Total	104	63.9	44.5	91.2	1.0
		Zinc, Total	84.3	48.1	44.5	81.3	1.0

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INORGANICS PRECISION REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 9908L850

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE	RPD	
-001REP	B0W5P4	Silver, Total	0.09u	0.08u	NC	1.0
		Arsenic, Total	2.2	2.1	4.7	1.0
		Barium, Total	60.3	64.2	6.3	1.0
		Beryllium, Total	0.59	0.63	6.1	1.0
		Cadmium, Total	0.22	0.20	10.0	1.0
		Chromium, Total	6.0	3.7	47.4	1.0
		Copper, Total	16.4	14.8	10.3	1.0
		Mercury, Total	0.01u	0.01u	NC	1.0
		Nickel, Total	9.3	7.4	22.8	1.0
		Lead, Total	3.4	3.3	3.0	1.0
		Antimony, Total	0.22u	0.19u	NC	1.0
		Selenium, Total	0.32u	0.28u	NC	1.0
		Thallium, Total	0.46u	0.40u	NC	1.0
		Vanadium, Total	63.9	57.9	9.9	1.0
		Zinc, Total	48.1	44.6	7.6	1.0

Recra LabNet - Lionville

INORGANICS LABORATORY CONTROL STANDARDS REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 9908L850

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	%RECOV	
			SAMPLE	AMOUNT		UNITS
LCS1	99L0601-LC1	Silver, LCS	49.7	50.0	MG/KG	99.4
		Arsenic, LCS	974	1000	MG/KG	97.4
		Barium, LCS	503	500	MG/KG	100.5
		Beryllium, LCS	24.6	25.0	MG/KG	98.4
		Cadmium, LCS	24.6	25.0	MG/KG	98.4
		Chromium, LCS	50.5	50.0	MG/KG	101.0
		Copper, LCS	126	125	MG/KG	100.4
		Nickel, LCS	198	200	MG/KG	99.0
		Lead, LCS	245	250	MG/KG	98.0
		Antimony, LCS	296	300	MG/KG	98.5
		Selenium, LCS	948	1000	MG/KG	94.8
		Thallium, LCS	986	1000	MG/KG	98.6
		Vanadium, LCS	257	250	MG/KG	102.9
		Zinc, LCS	97.1	100	MG/KG	97.1
LCS1	99C0254-LC1	Mercury, LCS	0.97	1.0	MG/KG	96.7

012

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B99-078

DATE RECEIVED: 08/24/99

RFW LOT # : 9908L850

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION EXTR/PREP	ANALYSIS
BOW5P4					
SILVER, TOTAL	001	S	99L0601	08/19/99	09/01/99
SILVER, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99
SILVER, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99
ARSENIC, TOTAL	001	S	99L0601	08/19/99	09/01/99
ARSENIC, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99
ARSENIC, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99
BARIUM, TOTAL	001	S	99L0601	08/19/99	09/01/99
BARIUM, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99
BARIUM, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99
BERYLLIUM, TOTAL	001	S	99L0601	08/19/99	09/01/99
BERYLLIUM, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99
BERYLLIUM, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99
CADMIUM, TOTAL	001	S	99L0601	08/19/99	09/01/99
CADMIUM, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99
CADMIUM, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99
CHROMIUM, TOTAL	001	S	99L0601	08/19/99	09/01/99
CHROMIUM, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99
CHROMIUM, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99
COPPER, TOTAL	001	S	99L0601	08/19/99	09/01/99
COPPER, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99
COPPER, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99
MERCURY, TOTAL	001	S	99C0254	08/19/99	08/26/99
MERCURY, TOTAL	001 REP	S	99C0254	08/19/99	08/26/99
MERCURY, TOTAL	001 MS	S	99C0254	08/19/99	08/26/99
NICKEL, TOTAL	001	S	99L0601	08/19/99	09/01/99
NICKEL, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99
NICKEL, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99
LEAD, TOTAL	001	S	99L0601	08/19/99	09/01/99
LEAD, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99
LEAD, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99
ANTIMONY, TOTAL	001	S	99L0601	08/19/99	09/01/99
ANTIMONY, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99
ANTIMONY, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99
SELENIUM, TOTAL	001	S	99L0601	08/19/99	09/01/99
SELENIUM, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B99-078

DATE RECEIVED: 08/24/99

RFW LOT #: 9908L850

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99 09/03/99
THALLIUM, TOTAL	001	S	99L0601	08/19/99	09/01/99 09/03/99
THALLIUM, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99 09/03/99
THALLIUM, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99 09/03/99
VANADIUM, TOTAL	001	S	99L0601	08/19/99	09/01/99 09/03/99
VANADIUM, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99 09/03/99
VANADIUM, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99 09/03/99
ZINC, TOTAL	001	S	99L0601	08/19/99	09/01/99 09/03/99
ZINC, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99 09/03/99
ZINC, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99 09/03/99

BOW5P2

SILVER, TOTAL	002	S	99L0601	08/19/99	09/01/99 09/03/99
ARSENIC, TOTAL	002	S	99L0601	08/19/99	09/01/99 09/03/99
BARIUM, TOTAL	002	S	99L0601	08/19/99	09/01/99 09/03/99
BERYLLIUM, TOTAL	002	S	99L0601	08/19/99	09/01/99 09/03/99
CADMIUM, TOTAL	002	S	99L0601	08/19/99	09/01/99 09/03/99
CHROMIUM, TOTAL	002	S	99L0601	08/19/99	09/01/99 09/03/99
COPPER, TOTAL	002	S	99L0601	08/19/99	09/01/99 09/03/99
MERCURY, TOTAL	002	S	99C0254	08/19/99	08/26/99 08/27/99
NICKEL, TOTAL	002	S	99L0601	08/19/99	09/01/99 09/03/99
LEAD, TOTAL	002	S	99L0601	08/19/99	09/01/99 09/03/99
ANTIMONY, TOTAL	002	S	99L0601	08/19/99	09/01/99 09/03/99
SELENIUM, TOTAL	002	S	99L0601	08/19/99	09/01/99 09/03/99
THALLIUM, TOTAL	002	S	99L0601	08/19/99	09/01/99 09/03/99
VANADIUM, TOTAL	002	S	99L0601	08/19/99	09/01/99 09/03/99
ZINC, TOTAL	002	S	99L0601	08/19/99	09/01/99 09/03/99

BOW5M4

SILVER, TOTAL	003	S	99L0601	08/19/99	09/01/99 09/03/99
ARSENIC, TOTAL	003	S	99L0601	08/19/99	09/01/99 09/03/99
BARIUM, TOTAL	003	S	99L0601	08/19/99	09/01/99 09/03/99
BERYLLIUM, TOTAL	003	S	99L0601	08/19/99	09/01/99 09/03/99
CADMIUM, TOTAL	003	S	99L0601	08/19/99	09/01/99 09/03/99
CHROMIUM, TOTAL	003	S	99L0601	08/19/99	09/01/99 09/03/99
COPPER, TOTAL	003	S	99L0601	08/19/99	09/01/99 09/03/99

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B99-078

DATE RECEIVED: 08/24/99

RFW LOT # : 9908L850

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	003	S	99C0254	08/19/99	08/26/99	08/27/99
NICKEL, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
LEAD, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
ANTIMONY, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
SELENIUM, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
THALLIUM, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
VANADIUM, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
ZINC, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99

B0W5P3

SILVER, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
ARSENIC, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
BARIUM, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
BERYLLIUM, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
CADMİUM, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
CHROMİUM, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
COPPER, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
MERCURY, TOTAL	004	S	99C0254	08/19/99	08/26/99	08/27/99
NICKEL, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
LEAD, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
ANTIMONY, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
SELENIUM, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
THALLIUM, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
VANADIUM, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
ZINC, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99

B0W5M5

SILVER, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
ARSENIC, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
BARIUM, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
BERYLLIUM, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
CADMİUM, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
CHROMİUM, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
COPPER, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
MERCURY, TOTAL	005	S	99C0254	08/19/99	08/26/99	08/27/99
NICKEL, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B99-078

DATE RECEIVED: 08/24/99

RFW LOT #: 9908L850

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
ANTIMONY, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
SELENIUM, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
THALLIUM, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
VANADIUM, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
ZINC, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99

BOW5P7

SILVER, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
ARSENIC, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
BARIUM, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
BERYLLIUM, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
CADMIDIUM, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
CHROMIUM, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
COPPER, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
MERCURY, TOTAL	006	S	99C0254	08/19/99	08/26/99	08/27/99
NICKEL, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
LEAD, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
ANTIMONY, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
SELENIUM, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
THALLIUM, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
VANADIUM, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
ZINC, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99

BOW681

SILVER, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
ARSENIC, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
BARIUM, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
BERYLLIUM, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
CADMIDIUM, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
CHROMIUM, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
COPPER, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
MERCURY, TOTAL	007	S	99C0254	08/19/99	08/26/99	08/27/99
NICKEL, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
LEAD, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
ANTIMONY, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99

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Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B99-078

DATE RECEIVED: 08/24/99

RFW LOT # :9908L850

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION EXTR/PREP	ANALYSIS	
SELENIUM, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
THALLIUM, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
VANADIUM, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
ZINC, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99

LAB QC:

SILVER LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
SILVER, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
ARSENIC LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
ARSENIC, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
BARIUM LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
BARIUM, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
BERYLLIUM LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
BERYLLIUM, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
CADMUIM LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
CADMUIM, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
CHROMIUM LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
CHROMIUM, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
COPPER LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
COPPER, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
MERCURY LABORATORY	LC1 BS	S	99C0254	N/A	08/26/99	08/27/99
MERCURY, TOTAL	MB1	S	99C0254	N/A	08/26/99	08/27/99
NICKEL LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
NICKEL, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
LEAD LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
LEAD, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
ANTIMONY LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
ANTIMONY, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
SELENIUM LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
SELENIUM, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
THALLIUM LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
THALLIUM, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
VANADIUM LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
VANADIUM, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
ZINC LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
ZINC, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99

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90108L850

Custody Transfer Record/Lab Work Request Page 1 of 1


ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) metals

Client <u>TNL-Hanford B99-078</u>				Refrigerator #			1	6				6	6	6	
				#/Type Container	Liquid										
					Solid	1g	1g	→				1g	1g	1g	
				Volume	Liquid										
					Solid	250	500	→				500	250	1000	
				Preservatives											
				ANALYSES REQUESTED →			ORGANIC				INORG				
					VOA	BNA	PesV	PCB	Herb		Metal	CN			
					✓/VOA	✓/BNA	✓/PesV	✓/PCB	✓/Herb						
				RECRA LabNet Use Only											
MATRIX CODES: S - Soll SE - Sediment SC - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description		Matrix QC Chosen (v)	Matrix	Date Collected	Time Collected	✓/24/99	✓/25/99	✓/26/99	✓/27/99	✓/28/99	✓/29/99	✓/29/99	✓/29/99
								MS	MSD						
	001	BOW SPA			S	8/19/99	1145	X	X	X	X	X	X	X	
	1	SP2													
	2	SP4													
	3	SP4													
	4	SP3													
	5	SP5													
	6	SP7													
7	SP1														
<i>Rain matrix QC</i>															

 11/3/99
 SB and TL added to all metals samples per client

Special Instructions:

*Ref# B99-078***COMPOSITE
WASTE**

Relinquished by	Received by	Date	Time
FedEx	Janson	8/24/99	0930

Relinquished by	Received by	Date	Time
	ORIGINAL		

 Discrepancies Between Samples Labels and COC Record? Y or N
 NOTES:
**4019645195*

RECRA LabNet Use Only

Samples were	<input checked="" type="checkbox"/> Shipped	or	<input type="checkbox"/> Hand Delivered
COC Tape was:	<input checked="" type="checkbox"/> Present on Outer Package		
1) Airbill #	<input checked="" type="checkbox"/>		
2) Unbroken on Outer Package	<input checked="" type="checkbox"/>	Y	N
3) Present on Sample	<input checked="" type="checkbox"/>	Y	N
4) Unbroken on Sample	<input checked="" type="checkbox"/>	Y	N
COC Record Present Upon Sample Rec't	<input checked="" type="checkbox"/>	Y	N
Holding Times	<input checked="" type="checkbox"/>	Y	N
Cooler Temp.	<input checked="" type="checkbox"/>	5.1	°C

CSD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B99-078-38

Page 1 of 2

Collector Brent Porter	Company Contact Chris Cealock	Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N	Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-3 >15' bgs	24 - 25	SAF No. B99-078		
Ice Chest No. <i>96-006</i>	Field Logbook No. <i>EL 1511</i>	Method of Shipment Federal Express			
Shipped To TMA/RECRA <i>\$70 8019-91</i>	Offsite Property No. <i>A990223</i>	Bill of Lading/Air Bill No. <i>423579528602 - 3.7</i>			
		COA <i>B20CW1 671C</i>			

POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	
		Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG	
		No. of Container(s)	1	1	1	1	1	1	1	1	1	1	
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL		
SAMPLE ANALYSIS													
Sample No.	Matrix *	Sample Date	Sample Time	Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions
B0W5P4	Soil	8-19-99	1145							X	X	X	X
CHAIN OF POSSESSION		Sign/Print Names					SPECIAL INSTRUCTIONS See chain of custody comments on SAF B99-078.					Matrix *	
Relinquished By <i>Brent Port</i>	Date/Time 8/19/99 15:00	Received By <i>Refer 1B</i>	Date/Time 8/19/99 15:00	(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196 (2) NO2-NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010					COLLECTOR UNAVAILABLE TO SIGN COL				Soil Water Vapor Other Solid Other Liquid
Relinquished By <i>REF 1B 82399 1100</i>	Date/Time	Received By <i>2000-09-16 82399 1100</i>	Date/Time										
Relinquished By <i>DISCARDED 82399 1100</i>	Date/Time	Received By <i>FED EX</i>	Date/Time										
Relinquished By <i>Zedde</i>	Date/Time	Received By <i>Jackson 8/24/99 0930</i>	Date/Time										

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B99-078-36

Page 1 of 2

Collector Brent Porter	Company Contact Chris Gearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N	Date Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-3 >15' bgs	17-18'	SAF No. B99-078		
Ice Chest No. 96-006	Field Logbook No. EC 1511		Method of Shipment Federal Express		
Shipped To TMA/RECRA 8/18/99	Offsite Property No. A990223		Bill of Lading/Air Bill No. 423579528602		
			COA B 20 CW 1 67/C		

POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG	
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1	
Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL		
SAMPLE ANALYSIS			Isotopic Uranium	Neptunium-237	Nickel-63	Techneum-99	Trilium - #3	VOA - 8260A (TCL); VOA - 8260A (Add-On) [1- Propanol, Ethanol]	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time									
B0W5P2	Soil	8-19-99	1105						X X X X		X	
											B0W5P2	

CHAIN OF POSSESSION	Sign/Print Names		SPECIAL INSTRUCTIONS See chain of custody comments on SAF B99-078.	Matrix *
Relinquished By Brent Porter 8/19/99 15:00	Date/Time	Received By Beller 1B 8/19/99 15:00	Date/Time	Soil
Relinquished By REF 1B 82399 1100	Date/Time	Received By SCHNEIDER 82399 1100	Date/Time	Water
Relinquished By SCHNEIDER 82399 1100	Date/Time	Received By FED EX	Date/Time	Vapor
Relinquished By Zeelee	Date/Time	Received By Johnson 8/24/99 0930	Date/Time	Other Solid
LABORATORY SECTION	Received By	Title		Other Liquid
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time	

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B99-078-31

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Collector Brent Porter	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N	Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-3 <15' bgs	12-17	SAF No. B99-078		
Ice Chest No. SMI 185	Field Logbook No. FL 1511	Method of Shipment Federal Express			
Shipped To TMA/RECRA 870 8-19-99	Offsite Property No. A990 ZZ3	Bill of Lading/Air Bill No. 423579528598 - 4.2			
				COA	B20CM 67/C

POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1
Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL	

SAMPLE ANALYSIS				Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1- Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	
Sample No.	Matrix *	Sample Date	Sample Time									
80W5M4	Soil	9-19-99	1025				X X X X X					80W5L

CHAIN OF POSSESSION	Sign/Print Names	Matrix *
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Relinquished By Brent Porter	Date/Time 8/19/99 15:00	Received By Kofer JB	Date/Time 8/19/99 15:00	SPECIAL INSTRUCTIONS See chain of custody comments on SAF B99-078.			Matrix *
Relinquished By REF 1B 82389 1100	Date/Time 8/19/99 1100	Received By SIGMA-MAR 82389 1100	Date/Time 8/19/99 1100				Soil
Relinquished By SONAR 82389	Date/Time 8/19/99 1100	Received By FEDEX	Date/Time 8/19/99 1100				Water
Relinquished By Fed-ex	Date/Time 8/20/99 0930	Received By Johnson	Date/Time 8/20/99 0930				Vapor
LABORATORY SECTION	Received By				Title		Other Solid
FINAL SAMPLE DISPOSITION	Disposal Method				Disposed By	Date/Time	Other Liquid

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B99-078-37

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Collector Brent Porter	Company Contact Chris Clearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N	Date Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-3 >15' bgs	19.5 20.5	SAF No. B99-078		
Ice Chest No. <i>SML-185</i>	Field Logbook No. <i>EL 1511</i>	Method of Shipment Federal Express			
Shipped To TMA/RECRA <i>RS 288-19-99</i>	Offsite Property No. <i>A990 223</i>	Bill of Lading/Air Bill No. <i>423579528598</i>			
		COA <i>B 20 CW 1 67/C</i>			

POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	
			Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage		Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL	
SAMPLE ANALYSIS				Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1- Propanol, Ethanol),	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCRs - 8062	See item (1) in Special Instructions	See item (2) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time										
B0W5P3	Soil	8-19-99	1121						X	X	X	X	

CHAIN OF POSSESSION		Sign/Print Names			SPECIAL INSTRUCTIONS			Matrix *	
Relinquished By <i>Brent Porter</i>	Date/Time 8/19/99 15:00	Received By <i>Refer 1B</i>	Date/Time 8/19/99 15:00	See chain of custody comments on SAF B99-078.			(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196 (2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010 <i>COLLECTOR UNAVAILABLE TO 3101 COC</i>	Soil	
Relinquished By <i>REF 1B 82399 1100</i>	Date/Time	Received By <i>3101 COC</i>	Date/Time 8/23/99 1100					Water	
Relinquished By <i>3101 COC 82399 1100</i>	Date/Time	Received By <i>FED EX</i>	Date/Time					Vapor	
Relinquished By <i>FED EX 82399 1100</i>	Date/Time	Received By <i>Jackson</i>	Date/Time 8/24/99 0930					Other Solid	
LABORATORY SECTION	Received By	Title						Other Liquid	
FINAL SAMPLE DISPOSITION	Disposal Method				Disposed By				Date/Time

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B99-078-32

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Collector Brent Porter	Company Contact Chris Gearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N	Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-3 <15' bgs	14' - 15'	SAF No. B99-078		
Ice Chest No. <i>SML 185</i>	Field Logbook No. <i>FLK511</i>			Method of Shipment Federal Express	
Shipped To TMA/RECRA <i>8-19-99</i>	Offsite Property No. <i>A990223</i>			Bill of Lading/Air Bill No. <i>423579528598</i>	
				COA <i>B20CW1671C</i>	

POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
		Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
		No. of Container(s)	1	1	1	1	1	1	1	1		
Special Handling and/or Storage		Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS				Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL), VOA - 8260A (Add-On) [1- Propanol, Ethanol]	pH (Soil) - 9045	Semi-VOA - 8270A (TCL), TPH-Diesel Range - WTPH-D, PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions	
Sample No.	Matrix *	Sample Date	Sample Time									
BOW5M5	Soil	8-19-99	1050				X	X	X	X	<i>Bow5L8</i>	

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By <i>Brent Porter</i>	Date/Time 8/19/99 15:00	Received By <i>Fader JB</i>	Date/Time 8/19/99 15:00	See chain of custody comments on SAF B99-078.				Soil
Relinquished By <i>REF 1-B 82399 1100</i>	Date/Time 8/19/99 1100	Received By <i>Stone JMK 82399 1100</i>	Date/Time 8/19/99 1100	(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196				Water
Relinquished By <i>200LC 82399 1100</i>	Date/Time 8/19/99 1100	Received By <i>FED EX</i>	Date/Time 8/19/99 1100	(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010				Vapor
Relinquished By <i>Jec-e</i>	Date/Time 8/23/99 0930	Received By <i>Jenson</i>	Date/Time 8/23/99 0930	(3) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Strontium-89,90 -- Total Sr; Total Uranium (Uranium); Isotopic Plutonium; Isotopic Thorium (Thorium-232); Americium-241				Other Solid
LABORATORY SECTION	Received By	Title		COLLECTOR AND LAB TO SIGN COC				Other Liquid
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By				Date/Time

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B99-078-41

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Collector Brent Porter	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N	Date Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-3 <15' bgs	9.5 - 10.5	SAF No. B99-078		
Ice Chest No. <i>SML-161</i>	Field Logbook No. <i>EL1511</i>	Method of Shipment Federal Express			
Shipped To <i>TMARECA MD 3319 R 73 8-19-99 RECRAT</i>	Offsite Property No. <i>N/A</i>	Bill of Lading/Air Bill No. <i>N/A 4019645195-5.1</i>			
					COA B20CW1 67/C

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None	
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	
	No. of Container(s)	1	1	1	1	1	1	1	1	
Special Handling and/or Storage	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL	

SAMPLE ANALYSIS				Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1- Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	
Sample No.	Matrix *	Sample Date	Sample Time									
BOW5P7	Soil	8-19-99	0900				X	X	X	X		<i>Bows10</i>
BOW681	Soil	8-19-99	0900				X	X	X	X		<i>Bowi14</i>

CHAIN OF POSSESSION	Sign/Print Names		SPECIAL INSTRUCTIONS	Matrix *
Relinquished By <i>Brent Porter</i>	Date/Time 8/19/99 15:00	Received By <i>Keller 1B</i>	Date/Time 8/19/99 15:00	(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196
Relinquished By <i>RGF 1B 82399 0900</i>	Date/Time 8/19/99 0900	Received By <i>SHOALEY/Abn 82399 0900</i>	Date/Time	(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
Relinquished By <i>S SCALE SP/Abn 82399 0900</i>	Date/Time 8/19/99 0900	Received By <i>FED EX</i>	Date/Time	(3) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Strontium-89,90 -- Total Sr; Total Uranium (Uranium); Isotopic Plutonium; Isotopic Thorium (Thorium-232); Americium-241
Relinquished By <i>Jedera</i>	Date/Time 8/24/99 0930	Received By <i>Jenson</i>	Date/Time	<i>COLLECTOR UNAVAILABLE TO SIGN COC.</i>

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time